

## 10.

Neotropical Chilopods and Diplopods in the Collections of the Department of Tropical Research, New York Zoological Society.<sup>1</sup>

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(Text-figures 1-23).

The present paper is a report upon a collection of tropical chilopods and diplopods submitted to me for study through the courtesy of Dr. William Beebe. The material was secured in the course of several expeditions directed by Dr. Beebe and carried out under the auspices of the Department of Tropical Research of the New York Zoological Society.

As shown by the following list of species taken at the several localities represented, the greater part of the material was collected in British Guiana, and more especially in Venezuela, during the years 1945 and 1946. It makes possible a considerable addition to our knowledge of the myriopod fauna of northern South America. That much remains to be done, however, is plainly indicated by the large percentage of new forms represented in the collection here surveyed.

Four new genera and 23 new species are described. All types and the entire collection are deposited in the American Museum of Natural History, New York City.

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## Class Chilopoda.

## Order Scolopendrida.

## CRYPTOPIDAE.

*Newportia diagramma* Chamberlin.

*Newportia diagramma* Chamberlin, 1921, *Occ. Papers Univ. Mich.*, 4(97); \*2: 8, 9.

Locality: British Guiana: Kartabo. (T.R. S. 3058). One specimen.

Described originally from British Guiana at Dunoon, Labba Creek.

*Newportia monticola* Pocock.

*Newportia monticola* Pocock, 1890, *Ann. Nat. Hist.*, ser. 6, 6:144.

*Newportia monticola* Pocock, 1896, *Biol. Centr. Amer. Chilopoda*, p. 34, \*3:6.

<sup>1</sup> Contribution No. 878, Department of Tropical Research, New York Zoological Society.

<sup>2</sup> This Table of Contents is organized according to the origin of specimens, rather than on a systematic basis.

Locality: Venezuela: Rancho Grande. One specimen taken in July-August, 1946, on the jungle floor.

This species was previously known from Ecuador, Colombia and Costa Rica.

***Newportia phoretha*, new species.**

Head and basal plate dark chestnut, the other tergites a lighter chestnut or brown.

Antennae composed of 7 articles of which the first three bear chiefly longer setae, the others almost exclusively shorter and finer, more dense hairs. Edge of prosternum gently convex on each side, obtusely excavated at middle.

Head without sulci. First dorsal plate with a sharply impressed, semi-circular sulcus but with no distinguishable paired sulci. Paired complete on second and subsequent tergites. Tergites showing in addition a coarser, deeper sulcus on each side toward the lateral border. Some plates show also a median furrow but no true keel.

Sternites with no paired sulci but with a strong median furrow over the posterior two-thirds or more of length.

Tibia of anterior legs with neither lateral nor ventral spine although occasionally a mid-ventral hair is more than usually strengthened in a way suggestive of a nascent spine. Tibiae with the usual spine at distal end above.

Prefemur of anal legs in the type with 4 large ventral spines; the femur with 2 spinules on mesal side; tarsus with 8 distinct joints on one leg and 10 on the other, with distal end of the latter lost.

Length: 35 mm.

Locality: Venezuela: Rancho Grande. Three specimens in bromeliads in June, July and August of 1945 and 1946.

One specimen referred to this species as a paratype has 11 segments to each tarsus of the anal legs. It differs in showing vague traces of paired sulci on the first tergite.

This species seems to be closest to *N. pusilla* Pocock but differs from it as well as from other known species in lacking both ventral and lateral tibial spines on the anterior legs.

Material: Holotype No. 461208, Paratype No. 461209.

***Otocryptops ferrugineus* (Linnaeus).**

*Scolopendra ferruginea* Linnaeus, 1767, Syst. nat., 12:1063.

*Otocryptops ferrugineus* Pocock, 1893, Jour. Linn. Soc. London, 24:463.

Localities: Venezuela: Rancho Grande. Six specimens taken in June, July and August, 1946. Caripito: One specimen taken in July.

This species has been recorded from many localities in America from Mexico south to Brazil and Ecuador, and in Africa from the western portion.

***Otocryptops melanostomus* (Newport).**

*Scolopocryptops melanostomus* Newport, 1845, Trans. Linn. Soc. London, 19:406.

*Otocryptops longiceps* Haase, 1887, Abh. Mus. Dresden, No. 5:98; \*6:106.

*Otocryptops melanostomus* Pocock, 1893, Jour. Linn. Soc. London, 24:464.

Localities: Venezuela: Rancho Grande. Two specimens taken in bromeliads in July and August. Cocos Is.: One specimen taken on *Arcturus* Expedition, May 22, 1925.

Previously recorded from many localities in the East Indies and in the western hemisphere from Central America south to Argentina.

**OTOSTIGMIDAE.**

***Otostigmus beebel*, new species.**

General color olive, with the legs light brown.

Antennae composed of 17 segments of which the first 2½ are glabrous. Head sparsely punctate. Prosternal teeth 4+4.

Dorsal plates from the third on with complete and fine paired sulci. Only the last tergite truly margined. The last few tergites finely scabrous, the prickles more or less in longitudinal lines; the other plates essentially smooth.

Sternites smooth and without pits or furrows except a median pit on the sternites of the middle region. Last sternite narrowing caudad; its caudal margin weakly incurved.

Coxopleural process short, rounded distally and unarmed.

Last legs wholly unarmed, smooth throughout. Last two pairs of legs without tarsal spines; all others with a single tarsal spine.

Length: 70 mm.

Localities: Venezuela: Rancho Grande. Three specimens were taken on the jungle floor in May and June, 1946, and two on July 25, 1948, by Dr. Beebe.

Structurally this species would seem to be related to *O. goeldi*, but it is a much larger form, the length of the latter species being only about 24 mm. It differs also, e.g., in having but a single tarsal spine on all the anterior legs.

Material: Holotype No. 461215, Paratype No. 461216.

***Otostigmus caducus*, new species.**

Head and first three tergites chestnut colored, the rest of the dorsum olive green. Antennae with first two segments olive, the others brown and distally becoming brown. Legs olive green.

Head smooth. Antennae composed of 18 articles of which none is completely glabrous.

Prosternal teeth 4—4, the two middle ones on each side more widely separated from each other than from those at ends of series; the dental plate wider than long.

Only the tergites from the 12th on sulcate, the sulci where present complete. Tergites of posterior region typically with six longitudinal ridges, sparsely scabrous keels and the outer borders of tergites more or less rugose. A median keel developed only on the more posterior tergites, where present not

high. Only the 21st tergite sharply margined, but others with margin set off by a shallow depression, being what might be called pseudo-margined. Last tergite with a median furrow on posterior portion.

Sternites without definite furrows or pits.

Coxopleurae produced slightly in a rounded prominence on inner side, the posterior margin bearing no spines. Poriferous area reaching caudal margin.

Prefemur of anal legs entirely unarmed. Only the first pair of legs with two tarsal spines.

Length: 38 mm.

Localities: Venezuela: Rancho Grande. Apparently most nearly related to *O. scabricauda* (H. and S.) and *O. rex* Chamberlin, known from Colombia and Brazil.

Material: Holotype No. 45462.

**Otostigmus pococki** Kraepelin.

*Otostigmus pococki* Kraepelin, 1903, *Int. Mus. Hamburg*, 20:124; \*62, 63.

Locality: British Guiana: Kartabo. Six specimens.

SCOLOPENDRIDAE.

**Scolopendra alternans** Leach.

*Scolopendra alternans* Leach, 1815, *Trans. Linn. Soc. London*, 11:383.

Locality: West Indies: Santa Lucia. Two specimens taken July 12, 1932.

This characteristically West Indian species occurs also in Florida, Venezuela and Brazil.

**Scolopendra galapagoensis** Bollman.

*Scolopendra galapagoensis* Bollman, 1890, *Proc. U. S. Nat. Mus.*, 12:215.

Locality: Hood Island, Galapagos. Three small specimens were taken May 27, 1925.

**Scolopendra subspinipes** Leach.

*Scolopendra subspinipes* Leach, 1815, *Trans. Linn. Soc. London*, 11:383.

Localities: British Guiana: Kartabo. Three specimens. Bermudas: two specimens taken Aug. 24, 1929.

**Scolopendra viridicornis** Newport.

*Scolopendra viridicornis* - *punctidens* - *variegata-cristata* Newport, 1844, *Ann. Nat. Hist.*, 13:97, 98.

Locality: British Guiana: Kartabo. Three specimens.

Order Geophilida.

SCHENDYLIDAE.

**Nesondyla**, new genus.

A genus in most features resembling the palearctic *Brachyschendyla* but differing in having the margins of the claw of the second maxillae closely pectinate. Teeth of mandible in one block; long and slender. Labrum widely concave or incurved and bearing numerous strongly developed teeth. In middle of clypeal region a more finely areolate spot bearing two setae. Ventral pores lacking on

sternites. Coxopleural pores two on each side, these large and homogeneous. Last ventral plate wide. Telopodite of anal legs six-jointed, the tarsus consisting of two articles and clawless.

Orthotype: *Nesondyla nealota*, new species.

**Nesondyla nealota**, new species.

Head a little longer than wide; anterior margin gently convex from side to side, the caudal margin a little incurved and the lateral margins convex throughout. Frontal suture not present, antennae unusually long.

Prebasal plate exposed. Claws of prehensors when closed nearly even with anterior margin of head. All joints unarmed. Chitinous lines not present.

Last ventral plate broad, the posterior corners rounded and the caudal margin gently convex. Coxal pits large, two on each side of which the posterior one is free and the anterior one partly covered.

Pairs of legs: 51.

Length: about 29 mm.

Locality: Hood Island. One specimen taken Apr. 27, 1925.

Material: Holotype No. 2567.

BALLOPHILIDAE.

**Cerethmus naiquatanus** Chamberlin.

*Cerethmus naiquatanus* Chamberlin, 1941, *Proc. Biol. Soc. Wash.*, 54:140.

Locality: Venezuela: Rancho Grande. One male taken in May-June, 1946, by Dr. Beebe.

The type locality of this species is also Venezuela at Los Canales, Naiquata. The specimen here recorded from Rancho Grande is larger than the holotype, its length being 62 mm. as against 40 mm. It has 85 pairs of legs while the holotype has 81. The peculiar antennae are as in the holotype but with less indication of geniculation at the middle. The labrum presents a well-sclerotized edge on each side but not at the middle where there is a soft protruding swelling; no teeth or pectinae. First maxillae with a lappet from each outer angle of the coxite but the telopodite lacking a lappet. Claws of palpi of second maxillae closely pectinate. Anal legs strongly crassate.

ORYIDAE.

**Notiphilides maximiliani miranda** (Chamberlin).

*Keporya miranda* Chamberlin, 1941, *Proc. Biol. Soc. Wash.*, 54:139.

Type Locality: Venezuela: Miranda: Curupas, Los Canales.

New Locality: Venezuela: Rancho Grande. Two adult females and a partly grown specimen were taken in May-June, 1946, by Dr. Beebe.

This form is maintained apart from *maximiliani*, sens. str., on the basis of a more distinct indication of a frontal suture by a fine furrow along a pale line. This, however, varies in distinctness and may not prove a dependable character for separation of the two forms. In the one female dissected the mandible shows only four pectinate lamellae

instead of the six given by Attems as typical for the true *maximiliani*. The basal plate in typical *maximiliani* seems normally to be about as long as the succeeding tergite, whereas in the Venezuelan form it is only about half as long or but little more, as is also recorded by Brolemann for his *N. grandis*. Of the two adult females from Rancho Grande, one has 87 pairs of legs, the other 95 pairs.

***Orphnaeus brevilabiatus* (Newport).**

*Geophilus brevilabiatus* Newport, 1845, *Trans. Linn. Soc. London*, 19:436.

*Orphnaeus lividus* Meinert, 1870, *Naturh. Tidsskr.*, ser. 3. 7:19.

*Orphnaeus brevilabiatus* Haase, 1887, *Abh. Mus. Dresden*, nr. 5: 111; \*117.

Locality: Hood Id., Galapagos. One specimen taken May 27, 1925.

This is one of the most abundant and widespread of geophilid chilopods, occurring in all tropical areas of America, India and Africa and the Pacific islands.

**Order Scutigerida.**

**SCUTIGERIDAE.**

***PSELLIODES colombiana* Chamberlin.**

*PSELLIODES colombiana* Chamberlin, 1921, *Occ. Papers Mus. Zool. Mich.*, 97:25.

Locality: Venezuela: Rancho Grande. Five specimens of various sizes, two of them exceptionally large. A small specimen was taken in a bromeliad on June 6, 1946.

**Class Diplopoda.**

**Order Glomeridesmida.**

**GLOMERIDESMIDAE.**

***Glomeridesmus obivius*, new species.**

A somewhat smaller species than the Colombian *G. porcellus* Gervais and Goudot, as identified and redescribed by Brolemann, the width being 2.5 mm. as against 3 mm., while broader than the *G. trinidadensis* of Loomis, the width of which is given as 2 mm. The length of the type of the present species is close to 11 mm.

It differs conspicuously in color pattern from the other two species mentioned. The head is dusky chestnut or reddish in front, but yellow on the sides; there are two dark spots between the antennae. Antennae dusky over yellow. The dorsum behind the collum shows a wide longitudinal band of black color enclosing three longitudinal series of yellow spots; the sides yellow except for a series of black marks, each mark in the form of an angular stripe about the anterior corner of the keel, one arm extending mesad along the anterior margin, the other back to middle along the lateral border. Venter and legs yellow.

Lateral keels with posterior corners rounded, being acutely produced only on the 18th and 19th segments.

Locality: Venezuela: Rancho Grande. One specimen taken in May-June, 1946.

Material: Holotype No. 461210.

**Order Cambalida.**

**CAMBALIDAE.**

***Phanolene*, new genus.**

Body of the form usual in the family. Eyes present, forming a single series paralleling the margin of the collum. Antennae moderately stout, clavate.

Collum overlapping posterior border of head; about as long as the two following tergites together; wholly smooth.

Body obviously constricted behind the collum. Keels of second segment only weakly developed, better developed on the third and of normal size on the fourth. Pores beginning on fourth. Tergites with five strongly developed keels between the porigerous keels. Anal tergite smooth; not projecting beyond the anal valves.

Orthotype: *Phanolene sima*, new species.

Differing from *Cambala* in having five crests between the porigerous keels and in having claws on the first legs.

***Phanolene sima*, new species.**

Text-figs. 1 & 2.

Ocelli four on each side. A sharp keel or ridge below outer edge, leaving below it a furrow into which the antenna fits. Antennae widely separated; 5th and 6th joints much swollen, making the antennae strongly clavate.

Collum entirely smooth. Second and especially the third and fourth segments narrower, producing a neck-like constriction. Second segment with crests distinct but short, these becoming longer on third and fourth segments. The pore borne at anterior end of its keel, the porigerous swelling nearly circular in outline. Below the porigerous keel six to eight crests which decrease in height and distinctness ventrad.

Anterior pairs of legs without any special processes or lobes.

Gonopods of male as shown in Text-figs. 1 and 2.

Number of segments: 58.

Length: about 21 mm.; width, 1 mm.

Locality: British Guiana: Kartabo. One male taken April 15.

Material: Holotype No. 241050.

**Order Spirobolida.**

**RHINOCRICIDAE.**

***Neocricus encantus* Chamberlin.**

*Neocricus encantus* Chamberlin, 1941, *Bull. Univ. Utah, Biol. ser.*, 6(4):15.

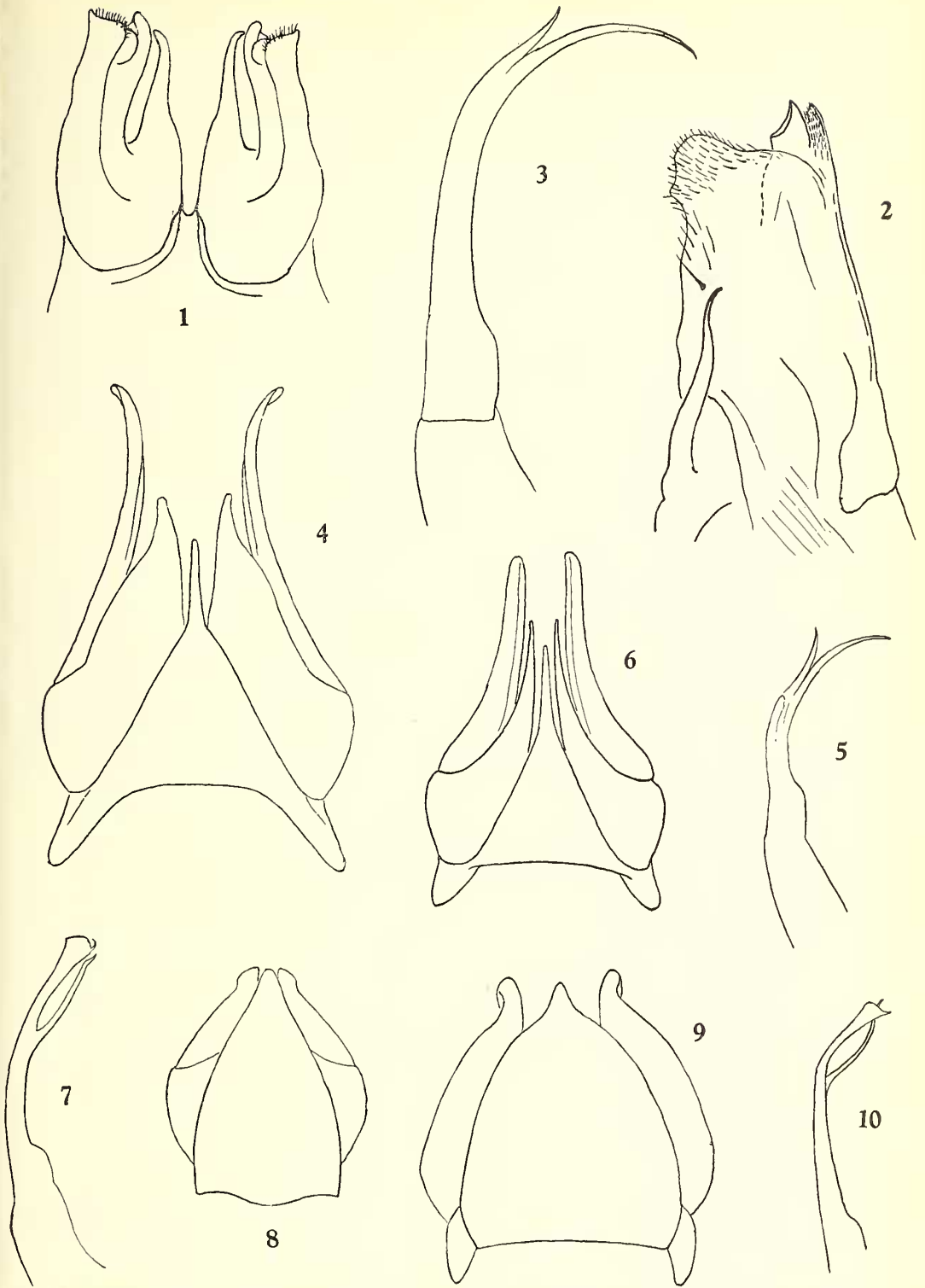
Locality: Venezuela: Caripito. One female taken in July. Rancho Grande: A male taken May 26, 1948.

The type of this species was taken in Venezuela at El Cantado, which is near Petare in Miranda, by G. Vivas-Berthier.

***Neocricus permundus*, new species.**

Text-figs. 3 & 4.

A larger and darker form than *N. foederatus* Chamberlin. General color of body



TEXT-FIG. 1. *Phanolene sima* n. sp. Anterior gonopods, cephalic aspect. TEXT-FIG. 2. *Phanolene sima* n. sp. Posterior gonopod. TEXT-FIG. 3. *Neocraticus permundus* n. sp. Posterior gonopod. TEXT-FIG. 4. *Neocraticus permundus* n. sp. Anterior gonopods, cephalic aspect. TEXT-FIG. 5. *Neocraticus tivior* n. sp. Posterior gonopod. TEXT-FIG. 6. *Neocraticus tivior* n. sp. Anterior gonopods. TEXT-FIG. 7. *Rhinocricus monilicornis* (Porat). Posterior gonopod. TEXT-FIG. 8. *Rhinocricus monilicornis* (Porat). Anterior gonopods. TEXT-FIG. 9. *Rhinocricus acrotypus* n. sp. Anterior gonopods. TEXT-FIG. 10. *Rhinocricus acrotypus* n. sp. Posterior gonopod.

typically black with caudal borders of metazonites dark chestnut or dark Indian red. Legs dark red.

Head smooth. Median sulcus fine, distinct across vertex and on lower part of face. Eyes separated by nearly three times their longer diameter. Clypeal foveolae 2—2.

Collum without distinct sulci except the anterior margining one on each side below level of eye.

Repugnatorial pores normally beginning on the sixth segment; sometimes missing from the seventh segment on one or both sides; pores in contact with sulcus on its anterior side. Segmental sulci distinctly impressed throughout, only a little curved at level of pore. Metazonites longitudinally striate below as usual and essentially smooth above. Prozonites with finer, more oblique, partly anastomosing striae below, these becoming transverse above. Scobina of middle segments consisting of a rather weak lunate impression on border followed by a narrowly triangular area composed of fine striae, the sides of this striate area concave, the narrow terminal part typically prolonged; scobina beginning at the eighth or ninth segment and continuing to the 38th; on the more anterior segments the lunate impression may be absent or but weakly indicated.

Last tergite with cauda much exceeding the valves; gently curving upward at tip.

The gonopods of the male are as shown in Text-figs. 3 and 4. The sternite, as in other species of the genus, much prolonged apically; exceeded by the prolonged coxal pieces of the anterior gonopods. Branches of the posterior gonopods very unequal.

Number of segments: 44.

Length of male holotype: nearly 140 mm.; diameter, 9.3 mm. Diameter of female allotype: 12 mm.

Locality: Venezuela: Rancho Grande. Among "shrubs and trunks" on jungle floor. Several specimens collected by Dr. Beebe.

This species is close to *N. caudatus* (Brolemann), but differing in its much darker coloration and apparently in details of the gonopods, such as in the more slender, better set-off, apical portion of the sternite and the longer, more slender telopodites of the anterior pair.

Material: Holotype No. 461223, Allotype No. 461224, Paratypes No. 461225, No. 461226, No. 461227, No. 461228, No. 461229.

***Neocricus tivior*, new species.**

Text-figs. 5 & 6.

A considerably smaller form than *N. foederatus* and lacking the strongly contrasting color annuli of the latter, the color being a dull chestnut or reddish-brown, with annuli on caudal borders of metazonites often not well defined. Legs ferruginous.

Head smooth; median sulcus fine across vertex and down lower part of face but obscure or absent at level of antennae as usual. Collum without sulci other than the usual margining one.

Segmental sulcus distinct throughout. Pores beginning on the sixth segment, each in contact with the sulcus which is gently excurved at its level. The usual anastomosing striae on prozonite and similar markings also present on dorsum behind the sulcus. Longitudinal sulci below on metazonites fine. Scobina consisting of a deep lunate impression followed by the usual series of striae; separated by nearly three times the transverse width of the lunate impression; beginning on seventh segment and present back to the fifth or sixth from the last segment.

The coxal division of the anterior gonopods distally very slender, distinctly but not greatly exceeding the slender distal tongue of the sternite; telopodite slender and distally straight as shown in Text-fig. 6. In contrast to that of *chacaitus* the anterior branch of the posterior gonopods is larger, curving and divergent as shown in Text-fig. 5.

Number of segments: 45.

Locality: Venezuela: banks of the Ocumare river. Male holotype taken April 23, 1946.

Aside from its much smaller size, this form differs superficially from *N. foederatus*, to which seemingly it is most closely allied, in having the characteristic anastomosing fine striae of the tergites much less strongly developed, with the lines more broken on the metazonites dorsally than in *foederatus* in which they are densely and strongly developed over the entire metazonite. The lunate impression of the scobina deeper and more uniformly developed than in *foederatus*.

Material: Holotype No. 461222.

***Neocricus conclusus*, new species.**

Text-figs. 22 & 23.

Very close to *N. encantus* Chamberlin in color pattern and in structure, but a considerably smaller form in which the characteristic sculpturing of the metazonites is less strongly developed.

The sternite of the anterior gonopods has the distal tongue shorter, much more exceeded by the coxae than *encantus*. The posterior gonopods have the two distal branches more nearly equal in length and less divergent, with the outer branch but little curved. See further Text-figs. 22 and 23.

Number of segments: 43.

Width: 5.6 mm.

Locality: Venezuela: Rancho Grande. Male holotype taken during May-June, 1946, by Dr. Beebe.

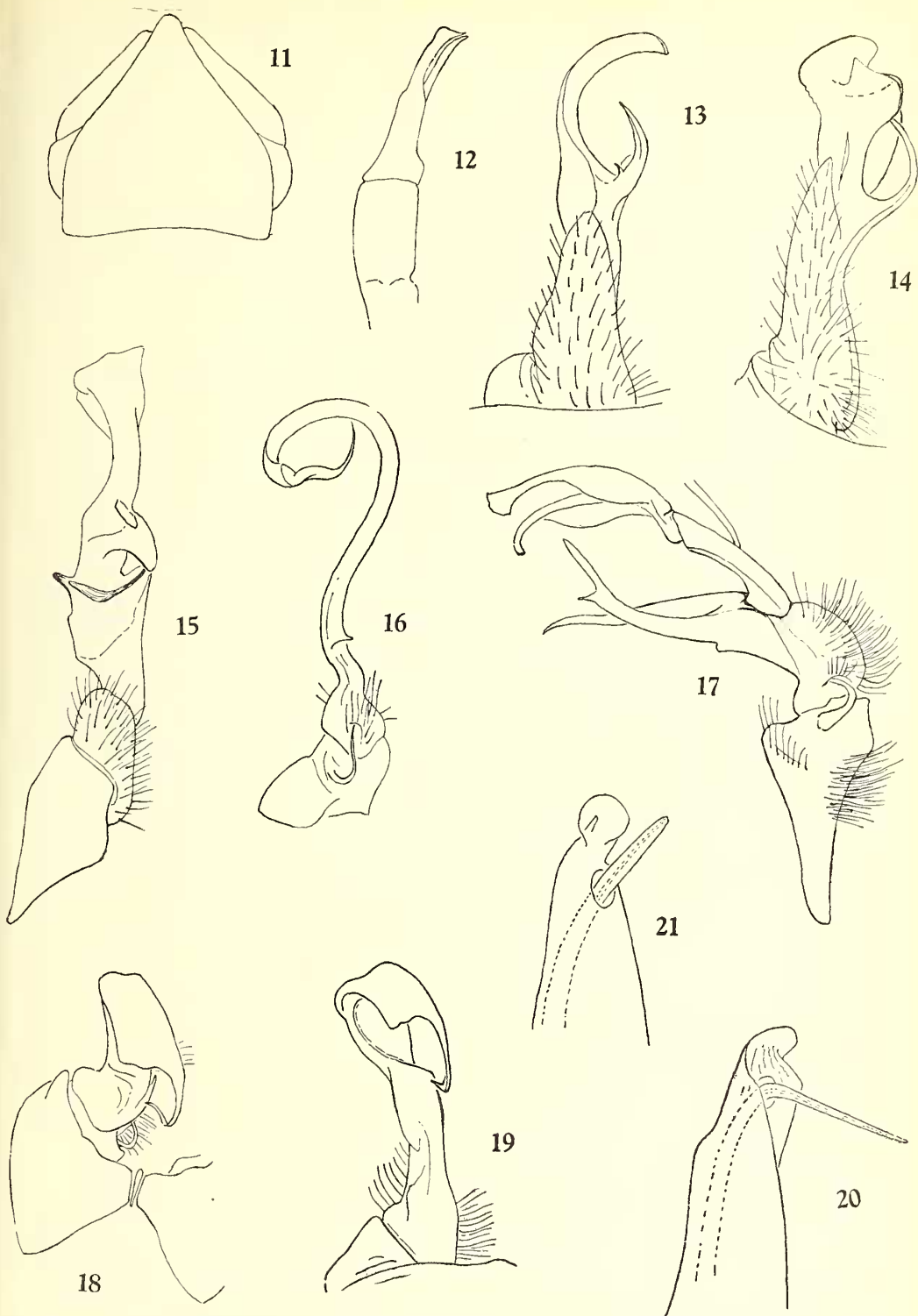
Material: Holotype No. 461207.

***Neocricus ruberculinus* (Silvestri)**

*Rhinocricus ruberculinus* Silvestri, 1898, *Anal. Mus. Nac. Buenos Aires*, 6:77.

Type Locality: Venezuela: Caracas. Female holotype taken by Mienert and preserved in the Copenhagen Museum.

New record: Venezuela: Rancho Grande.



TEXT-FIG. 11. *Rhinocricus finitis* n. sp. Anterior gonopods. TEXT-FIG. 12. *Rhinocricus finitis* n. sp. Posterior gonopod. TEXT-FIG. 13. *Amphelinus beebeyi* n. sp. Left gonopod in situ, caudal aspect. TEXT-FIG. 14. *Aphelidesmus confluens* n. sp. Gonopod. TEXT-FIG. 15. *Aphelidesmus frangens* n. sp. Gonopod. TEXT-FIG. 16. *Ankylophallus phanus* n. sp. Left gonopod, mesal aspect. TEXT-FIG. 17. *Dromodesmus celer* n. sp. Left gonopod, mesal aspect. TEXT-FIG. 18. *Liorhabdus beebeyi* n. sp. Left gonopod, subanterior view. TEXT-FIG. 19. *Liorhabdus beebeyi* n. sp. Left gonopod, ventral view. TEXT-FIG. 20. *Orthomorpha watsa* n. sp. Distal end of gonopod. TEXT-FIG. 21. *Orthomorpha coarctata* (Saussure). Distal end of gonopod.

***Rhinocricus acrotypus***, new species.

Text-figs. 9 &amp; 10.

Characteristically marked with black or olive-black annuli which embrace most of the tergites above but narrow to a point down the sides and part way beneath; the remaining parts of each segment yellow in color, the yellow bands broad ventrally, where they fuse, and narrowing in a stripe across dorsum along the segmental border. Collum dark, with yellow or orange borders. Head dark above, with antennae orange or somewhat ferruginous. Legs ferruginous. Anal tergite light at caudal end only.

Head smooth; the median sulcus well developed and below but interrupted at middle as usual. Clypeal foveolae 2—2.

Metazonites smooth and shining above; the longitudinal sulci fine, incomplete in upper part of series. Striae of prozonite oblique and conspicuous on the sides; transverse, wavy and broken across dorsum. Anal tergite bluntly rounded behind. Inner border of anal valves but little protruding. Scobina with anterior lunate impressions strongly marked, separated by a little more than twice their width; striae fine, the area longer than wide, narrowly rounded behind; present back to about the fifth segment from the last.

Gonopods with apical part of sternite rather narrower, more set-off than in the other species here described. Posterior gonopods of the type usual in *Rhinocricus*, with details of distal branches as shown in Text-fig. 10. For form of anterior gonopods see Text-fig. 9.

Number of segments: 49 (♂) and 50 (♀).

Length of male holotype: about 66 mm.; width, 5 mm. Width of female allotype, 5.8 mm.

Locality: Venezuela: Caripito. A male and female taken in July.

This is the largest of the species here considered, among which it would seem to be readily distinguishable by its color pattern.

Material: Holotype No. 42488, Allotype No. 42489.

***Rhinocricus finitis***, new species.

Text-figs. 11 &amp; 12.

A conspicuously banded form like *monilicornis*, the bands being alternately dark brown and whitish or light yellow, the light bands over the metazonites broader than the dark ones. Legs light ferruginous. Apical part of last tergite light in color.

A secondary sulcus in front of the primary one sharply defined across dorsum as in *monilicornis*. Longitudinal sulci on metazonites complete beneath but incomplete in upper part of series.

Anal tergite surpassing anal valves as in *acrotypus* and other species of the genus.

The gonopods closely resembling those of *monilicornis* except in proportions. The posterior gonopods proportionately shorter, with the lesser terminal branch broader in proportion to the principal blade. The ster-

nite surpassing the coxal plates instead of having tips on the same level. See further Text-figs. 11 and 12.

Number of segments: 52, of which the three preceding the anal are legless in the male type.

Diameter: 2.66 mm.

Locality: Venezuela: Caripito. One male taken in July.

A smaller form than *monilicornis*, the diameters being to each other about as 2:3. The larger number of body segments is due chiefly to three legless segments at caudal end which are absent in specimens of *monilicornis* examined.

Material: Holotype No. 42487.

***Rhinocricus monilicornis*** (Porat).

Text-figs. 7 &amp; 8.

*Spiroboles monilicornis* Porat, 1876, *Bih. Svensk. vet.-Akad. Handl.*, 4 (7):31.

Localities: Bermudas: Nonsuch Id. One male (#35,295). British Guiana: Kartabo. A male and female taken Mar. 4. Venezuela: Caripito. One female taken in July.

***Rhinocricus rubritypus***, new species.

Prozonites red above, deep brown or black below; entire metazonites blackish. Collum red, with black borders. Last tergite reddish or orange. Legs and antennae brown to nearly black.

Eyes twice their diameter apart; median sulcus across vertex and down face sharply impressed and complete. Clypeal foveolae 2—2.

Segmental sulcus angularly bent at level of pore. Both metazonites and prozonites smooth above, the prozonites wholly lacking the usual transverse striolations but with oblique striae beneath. The longitudinal striae of metazonites fine, extending up to level of pore. Scobina consisting of the usual lunate depression or pit followed by a slightly depressed area which narrows caudad and seems to be wholly without striae.

Last tergite angularly narrowed behind and considerably surpassing the valves.

Number of segments: 42.

Length: about 50 mm.; width, 6 mm.

Locality: Venezuela: Rancho Grande. One female taken April 23, 1945.

Material: Holotype No. 45464.

***Rhinocricus cocos*** Chamberlin.

*Rhinocricus cocos* Chamberlin, 1947, *Proc. Acad. Nat. Sci. Phil.*, 99:38; \*23, 28.

Locality: Cocos Is. Many specimens were taken on the *Arcturus* Expedition of 1925.

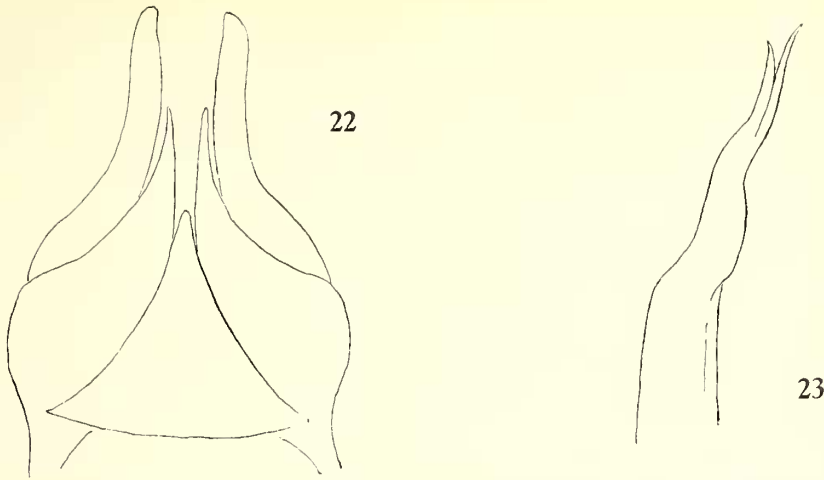
**Order Polydesmida.****EURYURIDAE.*****Amplinus beebei***, new species.

Text-fig. 13.

Dorsum solid black. Legs and antennae brown.

Collum with four transverse series of strongly developed tubercles of which those





TEXT-FIG. 22. *Neocricus conclusus*, n. sp. Anterior gonopods. TEXT-FIG. 23. *Neocricus conclusus*, n. sp. Distal portion of posterior gonopod.

of caudal series are largest. All tubercles rounded and smooth. Succeeding tergites typically with three transverse series of elongate tubercles over the middle area, these breaking into four series of shorter tubercles on each side; some of the lateral tubercles, particularly the more posterior ones, more or less conically pointed but the median ones convexly rounded and smooth. Margins of keels thickened and elevated, with the pores conspicuously insunk. Caudal angles of keels produced and tending to be apically a little curved inwards.

In the gonopods the two branches are very unequal, the outer falcate, distally curving mesad well beyond the much shorter inner branch much as in *A. orphnius* of Honduras and Guatemala, but with the outer branch broader, more laminate, and the inner proportionately much shorter.

Length: about 58 mm.; width, 8.5 mm.

Locality: Venezuela: Rancho Grande. Several males and females taken during July and August on the jungle floor in "shrubs and trunks." Two were also taken in bromeliads.

Material: Holotype No. 461211, Paratypes No. 461212, No. 461216, No. 461217.

***Aphelidesmus confluens*, new species.**

Text-fig. 14.

Dorsum dark chestnut, in part almost black, with the thickened borders of keels yellow. Legs yellow. Antennae yellow at base, becoming almost chestnut distally.

The collum with lateral ends narrowly obtusely rounded, not as much narrowed as in *frangens*.

Poriferous keels much swollen about pores, the borders much thicker than on the non-poriferous keels.

Sternites without processes.

Anal scale semicircular, convexly produced between the tubercles.

Gonopods obviously different from those of *frangens* and other related species. See Text-fig. 14 for details.

Width of male holotype: 4.2 mm.

Locality: Venezuela: Rancho Grande. The male holotype was taken April 22, 1945, and 11 paratypes in July-August, 1946.

Material: Holotype No. 45459, 11 Paratypes No. 4555.

***Aphelidesmus frangens*, new species.**

Text-fig. 15.

General color of dorsum of female brown, with keels yellow. Legs lighter brown or yellowish. The male holotype is darker, nearly black.

Collum in the female conspicuously different from that of *hybridus* in having the keels more strongly narrowing down the sides, with the ends blunt or rounded, much narrower than the plate across dorsal line.

The thickened border developed almost as much on the keels lacking pores as on the poriferous ones.

Sternites not bearing paired tubercles at each lateral end; the fourth without pointed tubercles or processes. Second joint of legs not produced at end.

Anal scale in outline trapeziform, convexly produced between the setigerous tubercles.

Differing from other known species in the details of the male gonopods; e.g., in presenting on the posterior sub-basal portion of the tibio-tarsus a short but conspicuous laminate process. See further Text-fig. 15.

Width: 7.5 mm.

Locality: Venezuela: Rancho Grande. Male holotype and three females taken on jungle floor in July-August, 1946, by Dr. Beebe.

In type of gonopods suggesting *A. hermaphroditus* Brolemann, but aside from differences in details of those organs, it is a much larger form.

Material: Holotype No. 461214, 3 Paratypes No. 461230.

## EURYDESMIDAE.

*Ankylophallus phanus*, new species.

Text-fig. 16.

Dark chestnut, with the thickened borders of the keels bright yellow. Legs yellow and antennae light brown.

Collum wide, acutely narrowed toward each end, the lateral margin continuing evenly the curve of the anterior margin; but little depressed laterally.

Dorsum smooth and shining. Keels of the first four segments rather wide, in contact with each other, while the keels of the following segments are well separated, the prozonites being long. Keels behind the fourth segment narrow; caudal angles acutely produced; margins thickened, with the swelling about pores moderate. Tip of cauda moderately decurved, furcate or bidentate at end.

Legs long and slender distad of the second joint; third joint much longest, the fourth and fifth short, the latter in the male produced into a short ventral pad at distal end.

Gonopods of male as drawn (Text-fig. 16.)

Length: 37 mm.; width, 5.6 mm.

Locality: Venezuela: Rancho Grande. One male and two females taken during the week of March 22-29, 1945.

Material: Holotype No. 45460, 2 Paratypes No. 45461.

*Dromodesmus celer*, new species.

Text-fig. 17.

Dorsum chestnut to chocolate colored with the keels yellowish over laterocaudal portion. Antennae chestnut and the legs brown.

Head and prozonites densely finely granular. Collum with keels horizontal; with two rows of tubercles in front of caudal margin.

On tergites following the first the keels turn upward above level of dorsum and become conspicuously produced as in the generotype. Two transverse series of tubercles over caudal portion of tergite, the tubercles of the posterior row larger, and in front of suture an incomplete series. Basal half or more of keels densely tubercular, the outer portion nearly smooth.

Legs and antennae very long as in *longipes*. Width: 4.6 mm.

Locality: Venezuela: Rancho Grande. One male, lacking the posterior end, was taken in July-August, 1946.

The generotype, *D. longipes* Chamberlin, was taken at Fundacion in Colombia. From that species the present one is readily distinguishable in the details of the gonopods as represented in Text-fig. 17.

Material: Holotype No. 461206.

*Liorhabdus*, new genus.

Closely related to *Cyclorhabdus* in having the tibio-tarsus of the male gonopods unsegmented and unbranched, being in the form of a simple, curved lamina which bears distally a slender process or style; mesal coxal laminae meeting at middle but not

fused. A somewhat transitional genus differing from *Cyclorhabdus* in not having pads produced from end of first tarsal segment beneath the second, and in having long, acuminate processes from the coxae of the third legs of the male. No processes on sternite of fifth segment.

Generotype: *Liorhabdus beebei*, new species.

*Liorhabdus beebei*, new species.

Text-figs. 18 &amp; 19.

Dorsum light brown, with an interrupted median dorsal yellow stripe, this distinct on prozonites but weaker on metazonites on which it ordinarily shows only on anterior part. Keels yellow. Head and collum deeper brown, the head lighter on face with clypeal region yellow. Antennae light brown proximally, with seventh joint and distal half of the sixth joint abruptly darker brown. Legs yellow.

Head smooth; vertigial sulcus fine but distinct; a pair of setae between bases of antennae and a second pair, a little more widely separated, below level of antennae. Antennae long, slender except sixth article which is clavately thickened distad; third and sixth joints somewhat the longest.

Collum large, its keels in line with those of following segments; smooth.

Surface of tergites smooth and glabrous. Keels of second and third segments with caudal corners rectangular, those of the following segments with the angles more and more produced caudad, the processes in middle and posterior regions prolonged and very acute; processes of the nineteenth tergite slender, parallel with body axis.

Second tarsal joint of legs proportionately longer than in the species of *Cyclorhabdus* and not supported by a pad beneath from preceding joint. In the male the coxal processes of the third legs are long, apically, conically pointed and curved forward. Coxae of sixth and seventh legs produced ventrad into conspicuous rounded prominences.

The gonopods of the male are as represented in Text-figs. 18 and 19.

Length: about 30 mm.; width, including keels, 4 mm.

Locality: Venezuela: Rancho Grande. One male taken by Dr. Beebe on July 25, 1948.

Material: Holotype No. 481563.

## Cryptodesmidae.

*Tunochilus*, new genus.

Collum nearly completely covering the head from above; anterior and lateral border upturned much as in *Pilochilus*, the anterior face of the upturned border nearly vertical and extending down to fit snugly against the head. The upturned border of collum not lobed as in *Pilochilus*, though widely and deeply notched at the middle line in front; the border above crossed by numerous fine ridges which project at free margin as denticles, these radial markings giving the

somewhat translucent outer part of the border a fluted appearance. The keels of the succeeding tergites also rising above level of the dorsum but becoming more nearly horizontal toward the posterior end; borders of keels crossed with radial fine ridges like those of collum, with the free margin similarly finely dentate or serrate. Pores dorsal in position, located within the fluted border on segments 5, 7, 9, 10 (?), 12, 13 and 15 to 19. Caudal tergite well developed and freely exposed. Tergites densely finely tubercular and with two or three transverse series of subconical tubercles. Generotype: *Tunochilus marginis*, new species.

***Tunochilus marginis*, new species.**

Dorsum brown, with the keels yellow.

Surface of the head finely granular. Antennal sockets rather close to each other. Antennae long and slender.

Collum covering the head above and fitting tightly against it; its anterior and lateral border turned conspicuously upward, the margin of the upturned rim finely serrate and with a large notch at middle line in front; level surface within the rim densely and finely granular; the clearer border of the rim without granules.

Keels of succeeding tergites upturned above level of intervening dorsum which is only slightly convex. Each tergite with a series of small but rather high, subconical, tubercles across caudal border, another series at middle, and an incomplete one farther forward; surface elsewhere finely granular; keels finely and unevenly serrate along free margins. Pores located a little more than their diameter from the inner edge of the striate border or three diameters from the outer margin.

Last tergite rather long, narrowing gently caudad, the end strongly convex; surface with numerous conical tubercles, some of which project along margins.

Width: 6 mm.

Locality: Venezuela: Rancho Grande. Two females taken in bromeliads on June 6, 1946.

Material: Holotype No. 461213.

PLATYRRHACIDAE.

***Rhyphodesmus kartabo*, new species.**

Entire dorsum, including keels, brown.

Surface of head densely and rather coarsely granular. Vertigial sulcus distinct, ending in a transverse depression between the antennae.

Collum with surface densely covered with tubercles or coarse granules but with no definite series of larger tubercles.

The succeeding tergites have the keels depressed, the dorsum between them high and strongly convex; surface densely tubercular, the tubercles evenly distributed, with no definite series of larger tubercles, the tubercles extending to and upon the margins of the keels; pores about three times their diameter from the margin.

Last tergite semicircular, the lateral and caudal margins forming an even curve; surface covered with granules abruptly smaller than those of the preceding tergites.

Diameter: 13 mm.

Locality: British Guiana: Kartabo. One female.

Distinguished from *R. amphelictus*, another Guianan species, which it resembles in size and color, in lacking definite series of larger tubercles on dorsum, in having the pores more remote from the margins of the keels, and in the more strongly elevated, convex dorsum.

ONISCODESMIDAE.

***Oniscodesmus variegatus*, new species.**

While material is not at hand for direct comparison, a reading of Brolemann's redescription of *O. aurantiacus* of Peters and of his own *O. aurantiacus villosus* indicates a close relationship to the latter but with significant differences. Like *villosus* the present species has the surface of the tergites finely shagreened and bearing hairs, but the latter are mostly short erect points only and by no means justifying the designation of villous attributed to the clothing of *villosus*.

The general color of the dorsum is reddish-brown, with irregular blacker areas as described for *villosus*. The anal tergite is solid black. The coloration of the head is characteristic, the vertex being black above the level of the antennal sockets and light gray elsewhere, the contrast between these areas being sharp. Antennae also gray proximally elsewhere becoming dark and showing an olive cast. Ventral surface of body reddish-yellow. Legs clear yellow.

Tergites above with the transverse sulcus well defined across dorsum and down to level of pores, with the narrower posterior division marked off by it considerably depressed below level of anterior portion and divided into areas by longitudinal sulci as in other species. The last tergite broad and much exposed, being overlapped anteriorly by the nineteenth tergite and laterally only a little by the keels of that segment.

A considerably larger form than *villosus*, having a width of 5 mm. as against less than 4 mm. given for the type of the latter.

Locality: Venezuela: Rancho Grande. One female taken during week of March 2-9, 1945.

Material: Holotype No. 45458.

***Oniscodesmus clarus*, new species.**

Contrasting in color with *variegatus*, the color of the body being yellow to light brown throughout, with a series of dark slots on each side in line with bases of keels; last tergite nearly black above, the penult tergite also dusky. Head brown above and in front, with its sides clear yellow. Antennae yellow, proximally darker, and also brownish distally. Legs light yellow. Dorsum lacking the series of clear orange spots present in *aurantiacus*.

The collum is narrower at the ends than in *variegatus* and the other species mentioned, its width being more nearly uniform.

Surface of tergites mostly smooth. Some sparsely distributed, short hairs are detected.

Width: 4.5 mm. It is thus a little smaller than *variegatus* and a little larger than *aurantiacus*.

Locality: Venezuela: Rancho Grande. One specimen taken in May-June, 1946.

Material: Holotype No. 461205.

#### STRONGYLOSOMIDAE.

##### *Orthomorpha watsa*, new species.

Text-fig. 20.

Dorsum chestnut, the keels yellow. Legs yellow.

Head roughened over vertex and down to level of antennae; not pilose. Antennae rather long, clavately thickened distad.

Sternite of fourth segment of male without process.

Keels all well developed, with caudal corners acutely produced.

Collum with lateral ends free; dorsal surface more or less obscurely rugose or tubercular.

Keels of second segment with caudal corners acutely produced those on posterior segment strongly so. Keels of the following segments large, the dorsum between them convex. Pores lateral in position, each on the lateral thickening well toward its ventral edge.

Anal tergite rather broad, the well separated terminal tubercles a little decurved.

Like *coarctata* in lacking sternal processes, but differing in the form of the gonopods, which are represented in Text-fig. 20 with which Text-fig. 21, representing the corresponding part of the gonopod of *coarctata*, may be compared.

Length: up to about 16 mm.; width, 2—2.2 mm.

Locality: British Guiana: Kartabo. Several specimens taken April 16.

Material. Holotype No. 241051.